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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/633,111

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Ji Zhang

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73552

7590

12/23/2008

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EXAMINER

HUBER, JEREMIAH C

ART UNIT

PAPER NUMBER

2621

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DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/633,111	Applicant(s) ZHANG ET AL.	
	Examiner JEREMIAH C. HUBER	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-18, 20, 21, 38-40, 42-44, 55, 57 and 5053 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 13-18, 20, 21, 38-40, 42-44, 50, 51, 53-55 and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/25/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/23/2008 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-18, 20, 21 and 38-40, 42-44, 50, 51, 53-55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (hereafter APA) in view of Rate Control for Robust Video Transmission over Burst-Error Wireless Channels (hereafter Hsu) and in further view of Lee et al (6351491) and in further view of Ozkan et al (6055270).

In regard to claim 13 the APA discloses a method including:

generating an output bitstream using a an encoder and at least one video frame from a packet payload of a compressed bitstream, the encoder having a corresponding quantization scale factor (APA Fig. 2 and pars. 10-12 note compressed video streams such as MPEG2 are comprised of video frames transported in packet payloads).

APA further discloses an encoding set including quantization , variable length encoding and outputting. It is noted that APA discloses only a single encoder generating a single output bitstream. However Hsu discloses a rate control method in which an encoder is provided with a plurality of outputs each have an associated quantization scale factor wherein, the outputs branch between the operation of a Discrete Cosine Transform (DCT) and the plurality of quantizers (Hsu Fig. 3 and Section III particularly paragraph 2). It is therefore considered obvious that one of ordinary skill in the art at the time of the invention would recognize the advantage of duplicating the outputs of the APA into several branches so as to obtain plural outputs, and encoders each with an associated quantization factor in order to select the encoder rate allocation that produces the minimum distortion at the decoder for given rate constraints as taught by Hsu (Hsu Section III paragraph 1).

It is further noted that neither that the APA nor Hsu disclose incorporating the plurality of output bitstreams into a 'video block'. However, Lee discloses a method of multiscale encoding in which a plurality of outputted data elements, quantized with a plurality of quantization scale factors, are incorporated into a 'video block' (Lee Fig. 6 and col. 5 lines 51 to 61). It is therefore considered obvious that one of ordinary skill in the art at the time of the invention would recognize the advantage of including video

blocks as taught by Lee in the invention of the APA in view of Hsu in order to gain the advantage of quality scalability as suggested by Lee (Lee col. 5 lines 51 to 61).

Further, the APA and Hsu both disclose compliance with MPEG and/or H.263 standards (Spec par. 10 and Hsu section II A) which inherently include video segment processing units such as groups of pictures, frames, slices, macroblocks, blocks. The standards further include block headers that contain a variety of information including segment offset, schedule information, and quantization parameters, which are compression statistics.

Finally, Lee further discloses a plurality of video segments encoded using different quantizer values (Lee col. 6 lines 12-44). Also Hsu further discloses a switch for selecting an appropriate video segment to output in order to select the proper quantizer level (Hsu section III note paragraph 2). It is noted that neither the APA, Hsu nor Lee disclose selecting at least one video segment responsive to bit rate demands of concurrent output streams. However, at the time of the invention it was well known in the art to select a proper quantization level responsive to bit rate demands of other concurrent output streams as disclosed by Ozkan (Ozkan generally Figs. 1-3 and col. 4 line 28 to col. 7 line 22 particularly note col. 4 line 62 to col. 5 line 7 for allocating bit rates in consideration of bit rate demands of concurrent output streams and col. 7 lines 4-22 for using quantizer to control the bit rate of a bitstream). It is therefore considered obvious that one of ordinary skill in the art would incorporate selection of quantization levels as taught by Ozkan to determine the appropriate quantization level as in Hsu and select the segment or segments corresponding to the determined quantization level as

in Hsu and Lee in order to gain the advantage of maintaining a constant quality for a plurality of output streams as suggested by Ozkan (Ozkan col. 3 lines 53-62).

In regard to claim 14 refer to the statements made in the rejection of claim 13 above. The APA further discloses DCT coefficients associated with a partial packed decode (Spec Fig. 2 215 and 225 and par. 11)

In regard to claim 15 refer to the statements made in the rejection of claim 13 above. The APA further discloses that the compressed bitstream is segmented into video segment processing units (Spec Fig. 2 210 and 215 and par. 11)

In regard to claims 16-18 and 20 refer to the statements made in the rejection of claim 13 above. In regard to claim 18, Lee further discloses interleaving transport packets of the selected at least one video segment with transport packets of other concurrent output streams (Lee Fig. 6 note video segments of a particular output 'interleaved' with concurrent outputs)

In regard to claim 21 refer to the statements made in the rejection of claim 13 above. Hsu further discloses that quantizer parameters are selected from a finite set (Hsu Section III par. 3) therefore any adjustment in quantizing parameters to reduce bit-rate will be a fixed percentage or amount as it will merely be moving from one fixed parameter to another fixed parameter.

In regard to claim 50 refer to the statements made in the rejection of claim 18 above. The APA further discloses storing at least one video frame in a frame buffer (Spec. Fig. 2 235 and par. 11).

In regard to claim 51 refer to the statements made in the rejection of claim 18 above. Ozkan further discloses outputting to a channel at a constant bit-rate (Ozkan abstract).

In regard to claims 38-44, 53-55 and 57 refer to the statements made in the rejection of claims 13-18, 20 and 21 above.

Response to Arguments

Applicant's arguments with respect to claims 13-18, 20, 21, 38-40, and 42-44 have been considered but are moot in view of the new ground(s) of rejection.

In response to the applicants arguments regarding claim 13 the applicant asserts that the APA in view of Hsu and in further view of Lee does not disclose a video block comprising a header and at least one video segment. The applicant acknowledges that APA and Hsu are MPEG and/or h.263 compliant, but argues that because Lee is relied upon for incorporating Lee must also disclose standards compliance. The examiner must disagree when incorporating the SNR scalability taught by Lee one need not abandon the MPEG and/or h.263 compatibility of the APA and Hsu. The examiner believes that even if Lee does not disclose MPEG compliance that formatting the invention of Lee to be so would fall within the knowledge of one of ordinary skill in the art, as MPEG and H.263 standards were notoriously well known at the time of the invention. Further, the examiner is not convinced by the applicants arguments regarding Lee. The portion of Lee cited by the applicant on page 9 of the remarks merely states the MPEG standards do not specify a method of rate control. Col. 2 lines 21-34 indicate

that the invention of Lee is intended to provide a form of rate control for an MPEG standard. The examiner believes this shows that Lee is in fact compliant with MPEG standards. Therefore, the examiner believes the rejection of claim 13 is proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMIAH C. HUBER whose telephone number is (571)272-5248. The examiner can normally be reached on Mon-Fri 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
Art Unit 2621

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Examiner, Art Unit 2621

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Supervisory Patent Examiner, Art Unit 2621